Date of Hearing: July 15, 2025

ASSEMBLY COMMITTEE ON WATER, PARKS, AND WILDLIFE
Diane Papan, Chair
SB 224 (Hurtado) – As Amended May 23, 2025

SENATE VOTE: 38-0

SUBJECT: Department of Water Resources: water supply forecasting

SUMMARY: Requires the Department of Water Resources (DWR) to adopt a new water supply forecasting model and procedures by January 1, 2027 and to present its operational decisions and rationale underlying those decisions in at least two public meetings every year beginning in 2027. Specifically, **this bill**:

1) Requires DWR to adopt a new water supply forecasting model and procedures that better address climate change by January 1, 2027.

2) Requires DWR to report to the Legislature on its progress in adopting a new water supply forecasting model and procedures beginning January 1, 2028 and continuing each year through January 1, 2032. DWR shall also post this report on its website.

3) Requires DWR to establish the specific criteria it will use to determine when the updated water supply forecasting model has demonstrated sufficient predictive capability to be ready for use in each of the watersheds. These criteria shall be published on DWR's website.

4) Requires DWR to implement a formal policy and procedures for documenting DWR's operational plans and rationale underlying those plans by January 1, 2027.

5) Requires DWR to report to the Legislature on its rationale for operating procedures for the previous water year beginning January 1, 2028 and continuing each year through January 1, 2032.

6) Requires DWR to present the following information to stakeholders at a minimum of two public meetings each year beginning in 2027:

    a) DWR's operational decisions and its rationale for the state's water supply during the previous water year; and

    b) The degree to which DWR succeeded in implementing the new water supply forecasting model and procedures required by this bill.

7) Requires DWR to provide notice of the public meeting described in #6 at least 60 days before the meeting is held.

8) Requires DWR to hold the public meeting described in #6 in two of the following locations on a rotating basis:

    a) The City of Redding;

    b) The City and County of San Francisco;

c) The City of Tulare; and

d) A location in southern California.

9) Requires DWR to include the information regarding its operational decisions and rationale that is provided at the public meeting to also be included in a report that is posted on DWR's website and submitted to the Legislature.

EXISTING LAW:

1) Establishes DWR and grants DWR with broad jurisdiction over water management including, dam safety, drought response and mitigation, water education, flood preparedness, and water supply and storage (Water Code § 120 *et seq*.).

2) Requires DWR to gather and correlate information and data pertinent to an annual forecast of annual water crop (i.e., water supply), including snow surveys, independently or in cooperation with any person or public agency (Water Code § 228).

3) Authorizes DWR to collect hydrologic data necessary for river forecasting, to make forecasts of stream flow, to provide for flood warning, and to provide for the communication of such information (Water Code § 236).

4) Requires DWR to develop the California Water Plan and update it every five years beginning December 31, 2003. Provides that the California Water Plan is the strategic plan for sustainably managing water resources for current and future generations. Requires DWR to establish an advisory committee made up of water stakeholders to assist in developing and updating the California Water Plan (Water Code § 10004 *et seq*.).

5) Requires the California Water Plan to include a discussion of various strategies including surface water storage, water conservation, water recycling, desalination, conjunctive use, and water transfers that may be pursued in order to meet the future water needs of the state, among other contents (Water Code § 10004.5).

FISCAL EFFECT: Unknown. This bill is keyed fiscal.

COMMENTS:

1) **Purpose of this bill**. The author cites "modeling errors" and a subsequent audit report on DWR's forecasting and water management decisions in water year 2021 as the impetus for this bill. The author argues this bill "requires the DWR to update its policies and procedures to better combat the impacts of climate change. The bill also requires the DWR to document and address the rationale behind its water operating decisions. [This bill] strengthens California's ability to manage its water resources efficiently, prevents unnecessary water loss, and enhances the state's resiliency to drought. Accurate water data modeling, planning, and accountability will ensure water stays a vital resource for California in the years ahead."

2) **Background**. One of DWR's many roles in water management is to collect information regarding precipitation and hydrologic conditions from across the state and to forecast water runoff from the state's major watersheds for the spring and summer months so that water managers and water users may plan accordingly. One of the principal publications DWR

uses for this purpose is Bulletin 120. DWR issues Bulletin 120 four times a year, in the second weeks of February, March, April, and May, to summarize precipitation, snowpack conditions, reservoir storage, and runoff to date in various regions of the state. Bulletin 120 also forecasts water runoff from the state's major watersheds for the remainder of the year. Each edition of Bulletin 120 provides a median and 80% probability range of runoff from major watersheds that is based on observed hydrologic conditions to date and historical data.

State Water Project (SWP). DWR is also responsible for managing SWP, "a multi-purpose water storage and delivery system that extends more than 705 miles" and encompasses a collection of canals, pipelines, reservoirs, and hydroelectric power facilities that delivers clean water to 27 million Californians, 750,000 acres of farmland, and businesses throughout California. SWP collects surface water from the northern part of the state in its largest reservoir, Lake Oroville, and transports that water south through rivers, the Sacramento-San Joaquin Delta, and the California Aqueduct to 29 cities, counties, and water districts that have contracts with SWP ("State Water Project Contractors"). DWR delivers a percentage of water to its contractors depending on hydrologic conditions and forecasted runoff. The contractors request an amount of their contracted water on October 1st (the beginning of the "water year") and DWR issues an initial percentage allocation around the beginning of December indicating how much water DWR anticipates, based on hydrologic conditions, it will be able to deliver to contactors in the remainder of the year. This initial allocation is typically adjusted three to four times over the winter and early spring as the total precipitation for the year becomes clearer. As an example, for water year 2024, DWR announced an initial allocation of 10% due to low reservoir storage and relatively dry conditions through November of 2023. As conditions improved and precipitation was in the "normal" range through early 2024, DWR increased the allocation to 30% in March 2024 and then to 40% in April 2024, the final allocation for the 2024 water year.

Water year 2021. By all accounts, 2021 was an extraordinarily challenging hydrologic year. It is California's second driest year on record and experts at the Public Policy Institute of California dubbed it the year that "broke" the California water system. For its part, DWR published a report on it dubbing 2021 an "extreme" year and discussed how climate change had invalidated historical precedents and assumptions regarding hydrologic projections. Due to dry conditions and high temperatures, runoff from snowpack was significantly lower than DWR forecasted. Due to high temperatures and dry soil, the snowpack had effectively sublimated and/or evaporated by May, much earlier than expected, and modeled runoff never occurred. Governor Newsom proclaimed a drought for Sonoma and Mendocino counties in April 2021, extended that emergency to the rest of Northern and Central California in May, and then to coastal California in July.

3) **Audit Report 2022-106 and DWR's response**. Due to DWR's missed forecast in water year 2021, the California State Auditor conducted an audit of the methodology DWR used to forecast runoff and manage SWP pursuant to a legislative request. The audit was completed in May 2023 and found problems with DWR's forecasting methodology and that DWR lacked documentation of its rationale for operational decisions. In its response to the audit, DWR acknowledges it made a forecasting error in 2021 yet disagrees with the audit's finding that DWR has been slow to incorporate climate change into its forecasting and operational decisions and lacks a comprehensive plan to respond to drought. DWR indicates it will implement other recommendations made in the audit (see below) and notes that "the shift at DWR is well underway to move from a statistical, record-based forecasting model to water

supply forecasts that simulate the physics of interactions among the atmosphere, water as rain or snow, and the land surface…." The audit's principal findings are:

- DWR has not adequately ensured that its water supply forecasts account for the effects of climate change.
- DWR must do more to prepare for the impact of more severe droughts on SWP's operations.

Below are the audit's principal recommendations, the State Auditor's assessment of the status of DWR's implementation of the audit finding, and a discussion of how, and if, this bill addresses each recommendation:

- Audit finding #1: to ensure that its Bulletin 120 water supply forecasts are as accurate as possible, DWR should implement a forecast verification process by November 2023.
    - Status of DWR implementation as of May 2024: Fully implemented
    - *This bill does not include provisions that address this audit finding.*

- Audit finding #2: to ensure that its water supply forecasts better account for the observed effects of climate change as soon as possible, DWR should continue to implement its plan to adopt an updated water supply forecasting model and updated procedures.
    - Status of DWR implementation as of May 2024: Partially implemented, estimated completion date in five to ten years due to budget constraints.
    - *This bill requires DWR to adopt a new water supply forecasting model and procedures that better address the effects of climate change by January 1, 2027.*

- Audit finding #3: to better prepare to effectively conduct SWP operations during future, possibly more extreme drought periods, DWR should, by May 2024, develop a long-term plan for proactively mitigating and responding to the impacts of drought on SWP.
    - Status of DWR implementation as of May 2024: Fully implemented.
    - *This bill does not include provisions that address this audit finding.*

- Audit finding #4: to ensure that it can demonstrate effective oversight of SWP operations and efficient use of the project's water supply, DWR should, by May 2024, develop and implement a policy and set of procedures for documenting its operational decisions and rationale.
    - Status of DWR implementation as of May 2024: Partially implemented, the State Auditor indicates that DWR "did not substantiate its claim of full implementation."
    - *This bill requires DWR to implement this recommendation by January 1, 2027.*

- Audit finding #5: to ensure that its operation of SWP reflects the possibility of more extreme climate conditions, DWR should, by May 2024, evaluate the data and information that it relies upon in its monthly and annual planning for its Lake

Oroville reservoir operations, including the volumes of water that it will need to store to achieve its objectives. It should update the data and information as needed.
  - Status of DWR implementation as of May 2024: Fully implemented.
  - *This bill does not include provisions that directly address this audit finding.*

- Audit finding #6: to ensure that it continually improves the effectiveness of its management of SWP, DWR should develop and implement a formal, written process for reviewing its planning and operations at least once annually.
  - Status of DWR implementation as of May 2024: Fully implemented.
  - *This bill requires DWR to present at a minimum of two public meetings commencing in 2027 on its operational decisions and its rationale for the state's water supply for the previous year.*

4) **Arguments in support**. The Olivenhain Municipal Water District supports this bill and argues that it will improve DWR's management of SWP: "this bill would require DWR to document and address the rationale behind its water operating decisions, therefore strengthening California's ability to manage its water resources efficiently while preventing unnecessary water loss."

5) **Proposed committee amendments**. The committee may wish that the author consider the following amendments to require DWR to update its forecasting methodology rather than adopt a new methodology (to be consistent with audit finding #2) and hold the public meetings in locations that are actually served by SWP (Redding, San Francisco, and Tulare are not served by SWP):

Amendment 1

240. (a) (1) On or before January 1, 2027, the department shall ***~~adopt a new~~ update its*** water supply forecasting ***~~model~~ models*** and procedures ***~~that better~~ to*** address the effects of climate change. The department shall prepare and submit a report to the Legislature on its progress in implementing the new forecasting model on or before January 1, 2028, and annually thereafter, and post the report on the department's internet website.

Amendment 2

242. (a) Commencing in 2027, and annually thereafter, the department shall present, at at least two open and public meetings, the following information to stakeholders, representatives of relevant governmental agencies, and other members of the public:

(1) The department's operational decisions and its rationale for the state's water supply during the previous water year.

(2) The degree to which the department succeeded in implementing the water supply forecasting model and procedures described in Section 240.

(b) At least 60 days before a meeting is held pursuant to subdivision (a), the department shall make the date, time, and location of the presentation publicly available on its internet website.

(c) The department shall, on a rotating basis, hold the open and public meetings pursuant to subdivision (a) in two of the following locations:

(1) One meeting in the ~~***City of Redding***~~ ***City of Bakersfield.***

(2) One meeting in the ~~***City and County of San Francisco***~~ ***County of Santa Clara***.

(3) One meeting in the City of Tulare.

(4) One meeting in southern California.

6) **Related legislation**. SB 231 (Hurtado) of 2023 was very similar to this bill and would have required DWR to adopt a new water supply forecasting methodology, put in place a formal process to evaluate the accuracy of such methodology, and develop a long-term plan for responding to and mitigating drought by December 31, 2025. SB 231 was held in the Assembly Appropriations Committee.

REGISTERED SUPPORT / OPPOSITION:

Support

Olivenhain Municipal Water District

Opposition

None on file

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